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MULTIPLE ALLOY ROTOR

Abstract

A monolithic rotor comprising first and second rotor regions axially aligned within the monolithic rotor and a transition zone therebetween. The first and second rotor regions are formed of different alloys and the transition zone having a composition that differs from and varies between the first and second rotor regions. The first rotor region is located within a high pressure region of the monolithic rotor and is formed from an alloy chosen from the group consisting of CrMoV low alloy steels, martensitic stainless steels containing about 11 to about 14 weight percent chromium, Fe-Ni alloys, and nickel-base alloys. The second rotor region is located within a low pressure region of the monolithic rotor and is formed from an alloy chosen from the group consisting of NiCrMoV low alloy steels and martensitic stainless steels containing about 11 to about 14 weight percent chromium.